



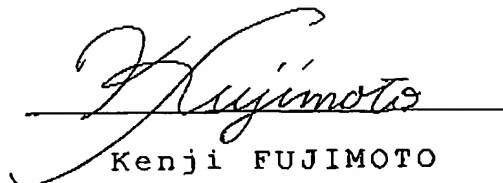
VERIFICATION OF TRANSLATION

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the following is a true translation of the officially
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15 2000-389990.

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Kenji FUJIMOTO

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Abstract

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[Document Name] Specification

[Title of the invention] IN-NET PRINTING SYSTEM
METHOD, AND METHOD OF CHARGING TYPE OF IN-NET PRINTING

[Scope of Patent to be Claimed]

5 [Claim 1]

An in-net printing system comprising:

a communication network

a portable terminal connected to said
communication network;

10 a server connected to said communication
network; and

a printer-side apparatus connected to said
communication network,

15 wherein said server has print objective
information to be printed,

wherein said server includes:

a converting function which converts said print
objective information to printable information which
can be printed by said printer-side apparatus, based
20 on instruction information instructed from said
portable terminal to said printer side through a
printer-side communicating function which equipped in
said printer-side apparatus, and outputs said
printable information to said printer-side apparatus
25 through said communication network.

[Claim 2]

The in-net printing system according to claim

- 5 -

1, wherein said portable terminal has an instruction transmitting function which transmits said instruction information to said printer-side communicating function by an non-admitted wireless.

5 [Claim 3]

The in-net printing system according to claim 1 or 2, wherein said portable terminal has a searching function which searches print objective information in said server through said communication network by
10 wireless.

[Claim 4]

The in-net printing system according to any of claims 1 to 3, wherein said portable terminal transmits unique information corresponding to said print
15 objective information and charge information corresponding to said portable terminal to said server through said communication network, when said portable terminal transmits said instruction information to said printer-side apparatus.

20 [Claim 5]

The in-net printing system according to any of claims 1 to 4, wherein said printer-side apparatus transmits printer unique information unique to said printer to said server, when said printer-side
25 apparatus transmits said instruction information to said server.

[Claim 6]

- 6 -

An in-net printing method comprising:

transmitting print objective information to a portable terminal owner through a communication network as a first communication action by a net
5 provider;

communicating print objective unique information corresponding to said print objective information to a printer-side apparatus as a second communication action by said portable terminal owner;

10 communicating said print objective unique information and printer unique information for a printer of said printer-side apparatus to said net provider as a third communication action by said printer-side apparatus;

15 converting said print objective information to printable information which can be printed by said printer based on said print objective unique information and said printer unique information as a conversion action by said net provider; and

20 communicating said printable information to said printer-side apparatus as a forth communication action by said net provider.

[Claim 7]

A method of charging type of in-net printing,
25 comprising:

transmitting print objective information to a portable terminal owner through a communication

- 7 -

network as a first communication action by a net provider;

communicating print objective unique information corresponding to said print objective information to a printer-side apparatus as a second communication action by said portable terminal owner;

communicating said print objective unique information and printer unique information for a printer of said printer-side apparatus to said net provider as a third communication action by said printer-side apparatus;

converting said print objective information to printable information which can be printed by said printer based on said print objective unique information and said printer unique information as a conversion action by said net provider; and

communicating said printable information to said printer-side apparatus as a forth communication action by said net provider; and

communicating terminal unique information unique to said portable terminal owner to said net provider as a fifth communication action.

[Claim 8]

The method of charging type of in-net printing according to claim 7, wherein said second communication action is executed by an non-admitted wireless.

[Claim 9]

- 8 -

The method of charging type of in-net printing according to claim 7 or 8, further comprising:

searching print objective information to be printed from lots of print objective information owned
5 by said net provider as a search action by said portable terminal owner.

[Claim 10]

The method of charging type of in-net printing according to any of claims 7 to 10, wherein said first
10 communication action and said search action are executed through a public wireless line.

[Claim 11]

The method of charging type of in-net printing according to any of claims 7 to 11, wherein said third
15 and fourth communication actions are executed through a public wire line.

[Detailed Description of the Invention]

[0001]

[Technical Field to which the Invention belongs]

20 The present invention relates to an in-net printing system and a method of charging type of in-net printing. More particularly, the present invention relates to an in-net printing system for outputting data on a network to a printer, and a method of a charging
25 type in-net printing.

[0002]

[Conventional Technique]

- 9 -

A technique is well known for printing data on the Internet onto an specified network printer. It is the technique in which the network printer shared by a plurality of computers receives a printing job from the computer and then prints it. The Internet is known as the network. The data on the Internet is outputted and printed by the printer in accordance with an instruction from the computer. The system, in which a printer actively prints data on the Internet without receiving all instructions from a computer, is known in Japanese Laid Open Patent Application JP-A-Heisei, 10-207657. In such known printing system, the printer retrieves the print conversion program, participates in the printing operation positively and actively, and needs a high computer function.

[0003]

The enlargement of a usage range in a portable terminal has been advanced. As an example of the enlargement of the usage range, it is requested that a portable terminal instructs a printer to output the data read on a network by using the portable terminal to a printer and print it. The portable terminal does not have a mechanical function that is physically large such as a printing function. Thus, the portable terminal instructs the printer to execute the printing operation. When the portable terminal is assembled

- 10 -

onto a network to then establish a system for instructing the printer to print the data on the network, it is required to provide a further convenient service to a user.

5 [0004]

It is required to improve the service of the system for instructing the printer to print the data on the network from the portable terminal having no physically large device. Moreover, it is required
10 to provide the service without any burden on the printer. In such service, the improvement of the service is desired from the viewpoint of an charging system.

[0005]

15 [Problems the Invention Tries to Solve]

An object of the present invention is to provide an in-net printing system that can improve the service of the system for instructing a printer to print the data on a network from a portable terminal, and a method
20 of a charging type in-net printing.

Another object of the present invention is to provide an in-net printing system that can provide the service without any burden on a printer, and a method of a charging type in-net printing.

25 Still another object of the present invention is to provide an in-net printing system that can improve an charging service in the system, and a method of a

- 11 -

charging type in-net printing.

[0006]

[Means for Solving the Problem]

The means for solving the problem is expressed
5 as follows. Numbers, notations and so on with
parenthesis () are added to the technical matters which
appear in the expression. The numbers, the notations
and so on correspond to the technical matters
configuring at least one embodiment or a plurality of
10 examples in a plurality of embodiments or a plurality
of examples of the present invention, especially
correspond to reference numbers, reference notations
and so on added to the technical matters expressed in
drawings corresponding to the embodiment or the
15 example. Such reference numbers and reference
notations clarify correspondence and bridging between
technical matters described in claims and the technical
matters of the embodiment or the example. This
correspondence and bridging do not mean that the
20 technical matters in claims are interpreted and limited
to the technical matter of the example.

[0007]

[Means for Solving the Problems]

An in-net printing system of the present
25 invention includes a communication network (6, 7), a
portable terminal (1) connected to the communication
network (6), a server (18) connected to the

- 12 -

communication network (6, 7) and a printer-side apparatus (3) connected to the communication network (7). The server (18) has print objective information (11) to be printed. The server (18) includes a
5 converting function which converts the print objective information (11) to printable information (12) which can be printed by the printer-side apparatus (3), based on instruction information (16) instructed from the portable terminal (1) to the printer-side apparatus
10 (3) through a printer-side communicating function (5) which equipped in the printer-side apparatus (3), and outputs the printable information (12) to the printer-side apparatus (3) through the communication network (7).

15 [0008]

An owner of the portable terminal can rapidly search the necessary information by using the external huge physical system not belonging to the owner, and promptly output it to the printer (14). Since the
20 printer-side apparatus (3) does not have a conversion function converting the print objective information (11) to the printable information (12) and the server has such the conversion function, the burden of the printer-side apparatus can be reduced and the net
25 provider can provide excellent service to the owner through the portable terminal.

[0009]

- 13 -

The portable terminal (1) has an instruction transmitting function (4) which transmits the instruction information (17) to the printer-side communicating function (5) by a non-admitted wireless (2). The portable terminal (1) has a searching function which searches print objective information (11) in the server (18) through the communication network (6) by wireless. The portable terminal (1) transmits unique information (17) corresponding to the print objective information and charge information (16) corresponding to the portable terminal (1) to the server (18) through the communication network (6), when the portable terminal (1) transmits the instruction information (16, 17) to the printer-side apparatus (3). By simultaneously transmitting the charge information (16), since obtaining data and payment are simultaneously executed, an charging operation can be simplified. The charge information (16) is transmitted to the server (18) from the portable terminal (1) directly and also simultaneously through the printer-side apparatus in parallel, the server confirms the charge information (16: ID number of the portable terminal) transmitted from both sides to secure the certainty of information service. For charging, only one of the charge information (16) transmitted from both sides may be used.

[0010]

- 14 -

The printer-side apparatus (3) transmits printer unique information (22) unique to the printer (14) to the server, when the printer-side apparatus (3) transmits the instruction information (16) to the
5 server (18).

[0011]

An in-net printing method of the present invention includes: transmitting print objective information (11) to a portable terminal owner (1)
10 through a communication network as a first communication action (including physical operations of the network and the portable terminal) by a net provider; communicating print objective unique information (17) corresponding to the print objective
15 information (11) to a printer-side apparatus (3) as a second communication action (including a physical operation of non-admitted communication) by the portable terminal owner (1); communicating the print objective unique information (17) and printer unique
20 information (22) for a printer (14) of the printer-side apparatus (3) to the net provider (18: including a physical server) as a third communication action by the printer-side apparatus (3); converting the print objective information (11) to printable information
25 (12) which can be printed by the printer (14) based on the print objective unique information (11) and the printer unique information (22) as a conversion action

- 15 -

(including a computing operation of the server) by the net provider; and communicating the printable information (12) to the printer-side apparatus (3) as a forth communication action by the net provider (18).

5 [0012]

Information search and print service can be combined, data providing service can be provided for a portable terminal, and quality of the service can be improved in speed, that is, the external high speed
10 and high performance physical equipment can be effectively used.

[0013]

A method of charging type of in-net printing of the present invention includes: transmitting print
15 objective information (11) to a portable terminal owner (1) through a communication network (6) as a first communication action by a net provider (18); communicating print objective unique information (17) corresponding to the print objective information (11)
20 to a printer-side apparatus (3) as a second communication action by the portable terminal owner (1); communicating the print objective unique information (17) and printer unique information (22) for a printer (14) of the printer-side apparatus (3)
25 to the net provider (18) as a third communication action by the printer-side apparatus (3); converting the print objective information (11) to printable information

- 16 -

(12) which can be printed by the printer (14) based on the print objective unique information (17) and the printer unique information (22) as a conversion action by the net provider (18); and communicating the printable information (12) to the printer-side apparatus (3) as a forth communication action by the net provider (18); and communicating terminal unique information (16) unique to the portable terminal owner (1) to the net provider (18) as a fifth communication action. In this way, in the information providing service, since the terminal unique information (16) is transmitted to the net provider (18) through the network as a charge information, the both services can be simultaneously and uniformly executed, and the quality improvement of information and the simplification of the charge operation can be simultaneously accelerated. The third communication action preferably includes an action communicating the terminal unique information (16) of the portable terminal owner. The second communication action is preferably executed by the non-admitted wireless because the peripheral physical equipment can be freely used.

[0014]

The print objective information (11) to be printed can be further preferably searched from lots of print objective information owned by the net

- 17 -

provider (18). Executing the first communication action and the search action through a public wireless line can further improve the service. Executing the third and fourth communication actions through a public
5 wire line can further improve the service.

[0015]

[Embodiments of the Invention]

Correspondingly to the drawings, an embodiment of an in-net printing system according to the present
10 invention, a portable terminal is installed together with a printer apparatus that can be connected thereto. As shown in Fig. 1, the portable terminal 1 is connected through a non-admitted wireless line 2 to a printer apparatus 3. The portable terminal 1 has a
15 non-admitted wireless function 4 on the terminal side to be connected to the printer apparatus 3 through the non-admitted wireless line 2. The printer apparatus 3 has a non-admitted wireless function 5 on the printer side to be connected to the printer apparatus 3 through
20 the non-admitted wireless line 2. The portable terminal 1 can be connected to the printer apparatus 3 wirelessly.

[0016]

The portable terminal 1 is connected through a
25 public paid subscriber wireless line 6 to a public paid wire network 7. The public paid wire network 7 has a network server 8 and a print data conversion server

- 18 -

9. The network server 8 stores a read data (contents) 11, and allows a user, who is a subscriber, to read it. The read data 11 has an address (Exemplification: http://www.aaa.com).

5 [0017]

The print data conversion server 9 has a converting function of converting the read data 11 into a printable data 12 that can be printed by the printer apparatus 3. The portable terminal 1 has a display
10 section 13. The display section 13 can obtain the read data 11 of the network server 8 through the public paid subscriber wireless line 6, and display the read data 11 as a read data 11'.

[0018]

15 The printer apparatus 3 has a printer apparatus body 14 and a network connection function 15. The network connection function 15 is connected to the public paid wire network 7, and it can obtain an information data on the public network through the
20 network server 8. The one of the information data obtained by the network connection function 15 is the printable data 12 after the print data conversion server 9 converts the read data 11. The printer apparatus body 14 outputs a print picture 11'' as a
25 printed matter based on the printable data 12.

[0019]

Fig. 2 shows an embodiment of a method of a

- 19 -

charging type in-net printing according to the present invention. A portable terminal user connects the portable terminal 1 to the public paid subscriber wireless line 6 holding a contract in advance, by using a contractor ID/password 16 (Step S1), and requests a line connection to the network server 8 having a desirable information on the public paid wire network 7 by using an address data 17 such as URL.

[0020]

10 A network connection provider 18 (including the network server 8 and the print data conversion server 9) receives and accepts the request for the line connection (Step S2), and establishes a network provider connection between the network connection
15 provider 18 and the portable terminal 1 (Step S3). The network connection provider 18 receives and accepts read service requests from the portable terminal 1 (Step S4). The portable terminal 1 retrieves desirable contents from the network server 8 (Step S5),
20 and requests the transmission of the read data 11 that is the desirable contents found out by the retrieval.

[0021]

In accordance with the request from the portable terminal 1, the network server 8 transmits the read
25 data 11 through the public paid subscriber wireless line 6 to the portable terminal 1 (Step S6). The read data 11 is displayed on the display section 13 of the

- 20 -

portable terminal 1 as the read data 11' (Step S7).

Thus, the portable terminal user can recognize the read data 11 as the read data 11'.

[0022]

5 The portable terminal user executes a print command function 19 of the portable terminal 1, when carrying out a process for printing the read data 11 by using the printer apparatus 3. Based on the execution of the print command function 19, the
10 non-admitted wireless function 4 of the portable terminal 1 requests the non-admitted wireless function 5 of the printer apparatus 3 to establish a non-admitted wireless connection (Step S8). The non-admitted wireless function 5 of the printer apparatus 3 accepts
15 and executes the non-admitted wireless connection in accordance with the request, and it is connected to the non-admitted wireless function 4 (Step S9).

[0023]

 If the non-admitted wireless connection is
20 established as mentioned above, the print command data 21 in the portable terminal 1 is activated (Step S10). The printer apparatus 3 receives and accepts the print command data 21 (Step S11). The portable terminal 1 transmits the print command data 21 together with
25 the above-mentioned contractor ID/password 16 and the address data 17 from the non-admitted wireless function 4 through the non-admitted wireless line 2 to the

- 21 -

non-admitted wireless function 5 (Step S12).

[0024]

The printer apparatus 3 transfers a printer unique data 22 unique to the printer apparatus 3 together with the contractor ID/password 16 and the address data 17 to the network connection provider 18 through a communication route via the public paid wire network 7 connected by the network connection function 15 to access to the network connection provider 18 (Step S13). Then, the network connection provider 18 receives and accepts the access from the printer apparatus 3, and connects through the public paid wire network 7 to the printer apparatus 3 (Step S14).

[0025]

The printer apparatus 3 transmits a print data transfer request 23 to the network connection provider 18 (Step S15). In the network connection provider 18, the print data conversion server 9 interprets the printer unique data 22, converts the read data 11 corresponding to the address data 17 into the printable data 12, generates the printable data 12 and transfers through the public paid wire network 7 to the printer apparatus 3 (Step S16). The printer apparatus body 14 of the printer apparatus 3 outputs the read data 11 as the printed material in accordance with the thus-transferred printable data 12 (Step S17, 18).

[0026]

- 22 -

The print data conversion server 9 has a print information file 31 shown in Fig. 3. The print information file 31 has file formats based on various application specifications, and further has various picture formats. The print data conversion server 9, with regard to the read data 11, has data conversion function into the bit map image and data conversion function into the printer language corresponding to various printers, and has a print language function 32 for converting the read data 11 into a printable language and then generating the printable data 12.

[0027]

The printer apparatus 3 has a personal computer 33 shown in Fig. 4. The personal computer 33, as shown in Fig. 3, has an expanding function 34 that expands the printable data 12, which is converted by the print language function 32 of the network server 8, into image data, and the expanding function 34 instructs the printer apparatus body 14 to carry out the Step S17 of Fig. 2.

[0028]

The network connection provider 18 or the network connection trader corresponding to the network connection provider 18 charges the fee for the service, which is to convert the read data 11 into the printable data to provide it, to the user corresponding to the portable terminal 1, based on the contractor

- 23 -

ID/password 16 and the address data 17 which is unique information unique to the read data 11. Thus, if paying such a fee, the user can quickly obtain any information existing on the network through the printer apparatus 3 by effectively using the portable terminal 1 having no physically printing function, through a quickly communicating network with regard to the information provided by the network connection provider 18, and the fee can be smoothly paid. In this way, the usage target range of the portable terminal 1 is spread.

[0029]

The portable terminal having no substantially physical performance can serve as an instructing tower within the network, and use the large physical facilities within the network or connected to the network, and obtain the information, and then print out the information. The function of the printer apparatus is not required on the portable terminal. The printer apparatus, when receiving the unique data unique to the necessary data from the portable terminal, uses the self-unique data and the unique data to the print target data, and then obtain the print target data from the network. In this case, it is not necessary for the printer apparatus to have the conversion function for the print language. Due to the usage of the quick network line, under the cheapest

- 24 -

infrastructure, the necessary information can be obtained at a cost cheaper than that of the case of the usage of the public line.

[0030]

5 [Effect of the invention]

The in-net printing system according to the present invention and the method of charging type of the in-net printing can use the function and the information on the network having the physically large
10 scale and the quick performance, and output to the printer from the portable terminal having no physical performance while reducing the burden on the printer, also, both the services of the data provision and the printing provision can be integrally made into the high
15 quality. Moreover, it is possible to unify the services including the charging operation into the single service.

[Brief Description of the drawings]

[Fig. 1] Fig. 1 is a system block diagram showing
20 an embodiment of an in-net printing system according to the present invention;

[Fig. 2] Fig. 2 is an operational flowchart showing an embodiment of a method of a charging type in-net printing according to the present invention;

25 [Fig. 3] Fig. 3 is an operational flowchart showing a part of the operational flow of Fig. 2 in detail; and

- 25 -

[Fig. 4] Fig. 4 is an oblique projection view showing a printer.

[Description of the reference Numerals and Symbols]

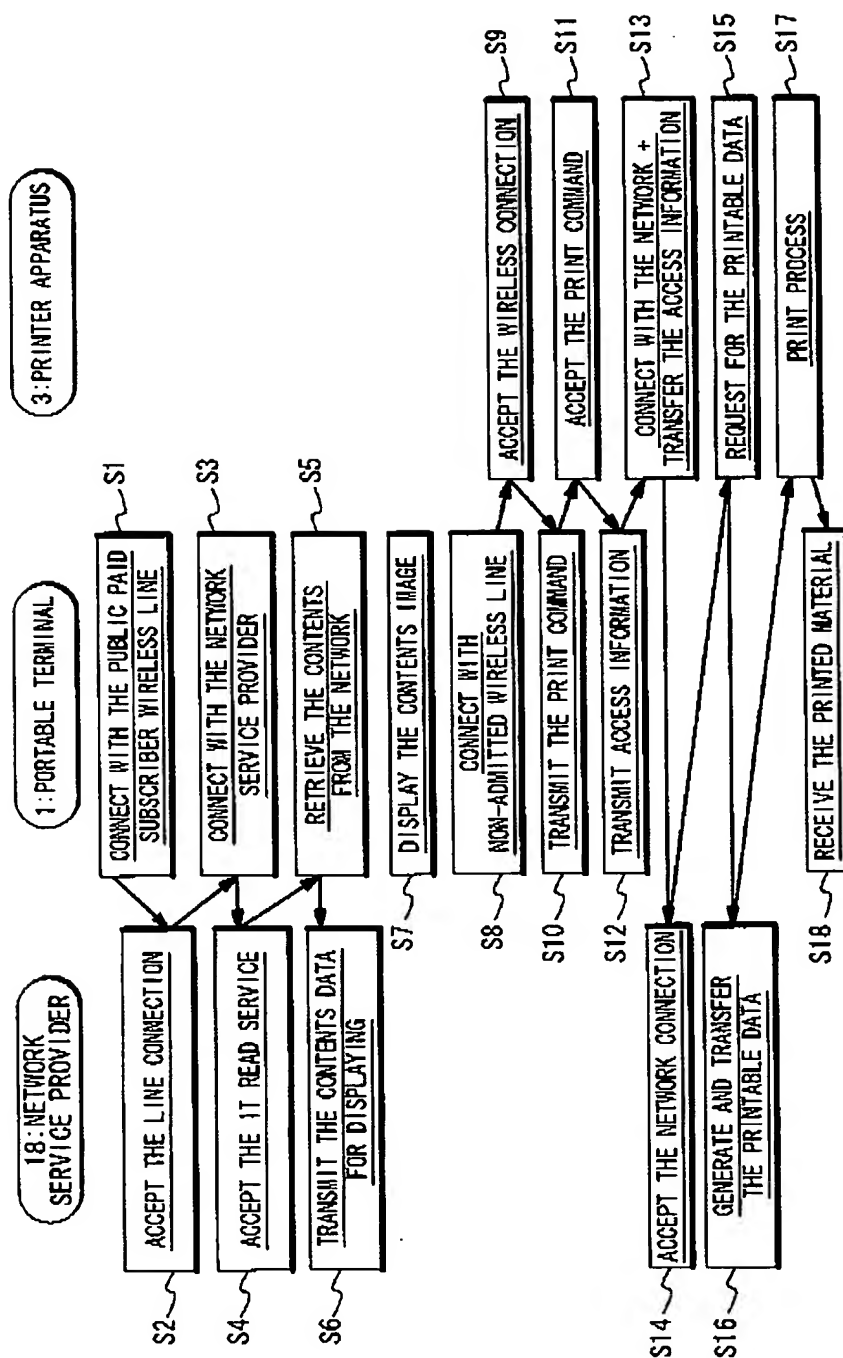
- 1 -- portable terminal (portable terminal owner)
- 5 4 -- instruction transmitting function
- 3 -- printer-side apparatus
- 5 -- printer-side communication function
- 6, 7 -- communication network
- 11 -- print object information
- 10 12 -- printable information
- 14 -- printer
- 16 -- charge information (terminal unique information)
- 17 -- unique information
- 18 -- server (network provider)
- 15 22 -- printer unique information

[Document Name] Drawings

[Fig. 1]



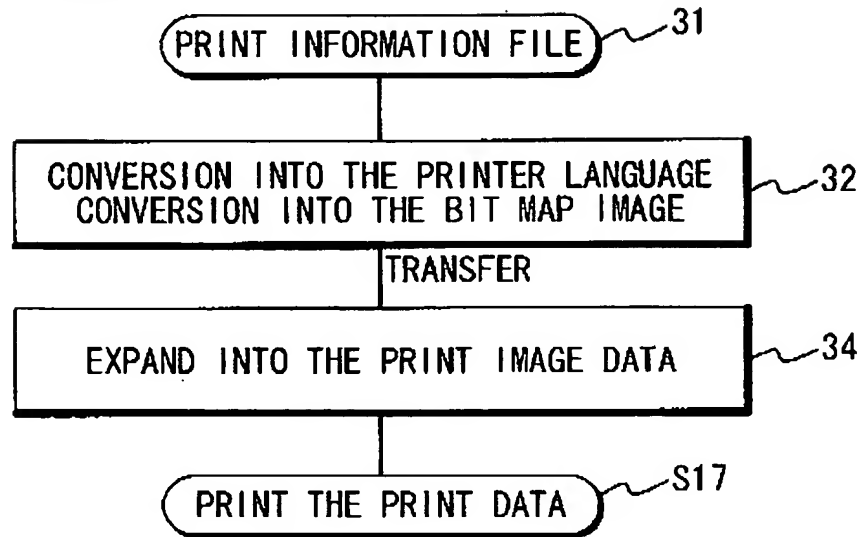
- 27 -



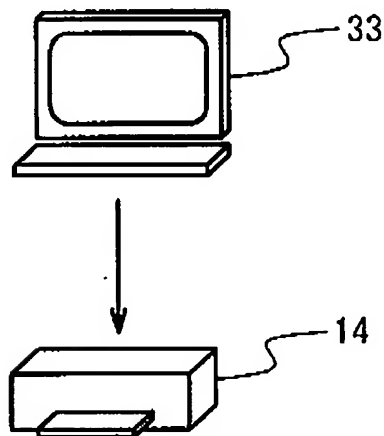
[Fig. 3]



- 28 -



[Fig. 4]



[Document Name] Abstract

5 [Abstract]

[Object]

To improve the printing/charging service of a system for making a printer print information on a network by using a portable terminal.

- 29 -

[Solving Means]

The portable terminal 1, a server 18 and a printer-side apparatus 3 are connected through communication networks 6 and 7. The server 18 provided with print objective information 11 to be printed has functions of converting the print objective information 11 to printable information 12 and transmitting the printable information 12 through the communication network 7 to the printer-side apparatus 3 based on the instruction of the printer-side apparatus 3 which receives instruction information 16 from the portable terminal 1. A portable terminal user fully utilizes physical equipment of the high-speed/high-performance in printing and information storage, present on the outside, and freely can read out required data. A data conversion function is not required for the printer-side apparatus, and data service and printing are provided with high quality.

20 [Selected Drawing] Fig. 1

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